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THE legislature of Pennsylvania at its last session appropriated three hundred and twenty-five thousand dollars to the University of Pittsburgh to be expended for new buildings and maintenance.

BY the late Dr. F. W. Draper, Harvard University receives an unrestricted bequest which it is believed will amount to $100,000.

THE Massachusetts legislature has appropriated $80,000 for the erection of a fireproof building for the departments of zoology and entomology, at the Massachusetts Agricultural College.

THE New York legislature appropriated $57,000 for the use of the Agricultural School of St. Lawrence University.

THE Tennessee legislature has passed a bill giving 25 per cent. of the state's revenues for education, 7 per cent. being for the university and experiment station.

THE late Mr. James Duncan has bequeathed a portion of his estate, calculated to amount to about $300,000 for the establishment of a school of industrial art in Dundee, Scotland.

THE new Institute of Physiology at University College, London, will be formally opened on Friday, June 18, by the Hon. R. B. Haldane, secretary of state for war. The funds for the building of the institute were provided by Mr. Ludwig Mond and Dr. Aders Plimmer and by a bequest of the late Mr. Thomas Webb.

DR. SAMUEL AVERY, head of the department of chemistry in the University of Nebraska and acting-president since the resignation of Dr. Andrews, has been elected president of the institution.

DR. ERNEST MERRITT, professor of physics, has been appointed dean of the graduate school of Cornell University.

AT the University of Minnesota, Professor John Zeleny has been appointed head of the department of physics to succeed Dean Frederick S. Jones, who has been called to the deanship of Yale College; Assistant Professor Anthony Zeleny has been appointed professor of physics, and Dr. W. F. Holman, of Worcester Polytechnic Institute, instructor in physics; and a new instructorship not yet filled has been created. Assistant Professor H. A. Erikson returns to the department after a year's absence at Cambridge, England, and Dr. A. F. Kovarik has obtained a leave of absence for study abroad.

DR. H. H. HORNE, professor of philosophy at Dartmouth College, has been appointed professor of the history of education at the New York University, to succeed the late Professor Gordy.

DR. CHARLES T. BURNETT, of Bowdoin College, has declined a call to the chair of psychology at Amherst College.

MR. C. T. BRUES, of Milwaukee Public Museum, has been appointed instructor in economic entomology at Harvard University.

MISS MABEL BISHOP, fellow in zoology in Smith College, has been appointed instructor in biological science in the Woman's College of Baltimore.

DR. J. B. LEATHES, of London, has been appointed professor of chemical pathology in the faculty of medicine of the University of Toronto.

DISCUSSION AND CORRESPONDENCE

TO THE PHILOSOPHIC ZOOLOGIST

Whether definite variations are by chance useful, or whether they are purposeful are the contrasting views of modern speculation. The philosophic zoologist of to-day has made his choice. He has chosen *undirected* variations as furnishing the materials for natural selection. It gives him a working hypothesis that calls in no unknown agencies; it accords with what he observes in nature; it promises the largest rewards.

The above paragraph is a quotation from the address of my friend and colleague, Professor T. H. Morgan, delivered in the Darwin course at Columbia University, February 26. It is interesting as showing the absolute divorce between the zoological and paleontological observer, a matter to which I have called renewed attention in my Baltimore address recently published in "Fifty Years of Darwinism."

If the word "undirected" implies fortuity, as I presume it does, it is an interesting future possibility that the theory of the building up

of adaptations out of the natural selection of undirected variations, to use my colleague's language, may prove to be a dogma quite as unsupported by facts as the Lamarckian dogma of the inheritance of acquired characters. I long ago pointed out that a very large number of new characters in the hard parts of mammals are adaptive in direction from the beginning; I am very far from saying that *all* new characters are adaptive in direction; I only make this statement as to those characters I have had the opportunity of repeatedly observing.

I now challenge the zoologists to produce a single instance of a series of animals in which adaptive characters are being accumulated through the *selection* of undirected variations, *i. e.*, of variations which are thoroughly mixed up, in which *there is no law evident.* Such a series has never been produced by any one. Of course I bar from this challenge orthogenic changes of character under environmental influences. I refer to the *pure* Darwinian hypothesis. The hypothesis is still as Darwin left it, an ingenious working theory, awaiting either experimental evidence or evidence of any kind. How long this assumption will pass muster as based on observation it is hard to say. We await some paleontological Weismann who will smite it hip and thigh as the zoological Weismann smote Lamarck's assumption.

While the "philosophic zoologist" of to-day has made his choice, the philosophic paleontologist has also made his choice. The latter certainly does not find direction in the old teleologic sense, but quite as certainly he finds no evidence of such fortuity as will justify the use of the word *undirected* as furnishing materials for natural selection. The materials for natural selection are furnished by the *ensemble* of an enormous number of characters, each of which is a unit pursuing its independent history and fluctuating and mutating and moving in direct lines under laws which the philosophic paleontologist has proof of, but totally fails to understand. Consequently he assumes the agnostic position that there is some principle, or principles of direction, or better—to use Professor Morgan's own words —"unknown agencies," still to be discovered other than the principle of order coming out of fortuity.

Henry Fairfield Osborn

NELSON'S LOOSE LEAF ENCYCLOPEDIA.

To the Editor of Science: In February an article was published in Nelson's "Loose Leaf Encyclopedia" upon the Messina-Reggio earthquake, the authorship of which was credited to Mr. Frank A. Perret and myself. In justice to Mr. Perret, however, it should be stated that he had nothing whatever to do with the preparation of the article beyond furnishing the one item pertaining to the height of the "tidal" wave at Messina which is duly credited to him. The insertion of Mr. Perret's name as joint author was done by the publishers of the encyclopedia without my knowledge or consent, but thus far I have been unable to obtain any correction of their error.

E. O. Hovey

New York,
May 11, 1909

SCIENTIFIC BOOKS

General Physics. By Henry Crew. New York, The Macmillan Co. 1908.

A Text-book of Physics. Edited by A. Wilmer Duff. Philadelphia, P. Blakiston's Son & Co. 1908.

The publication of these two excellent text-books designed for college classes in physics illustrates the general dissatisfaction among college professors of physics with both existing text-books and accepted methods. There are many difficulties inherent in the teaching of physics and there are many points concerning which the best teachers are to a certain degree undecided. As physics is taught at the present time in most American colleges the time devoted to it is one year during each week of which there are three hours of lectures or class work, accompanied by five or six hours of laboratory work. In this time a student is supposed to cover the field of elementary mechanics, properties of matter and physics proper, including heat, light, etc. Within recent years a demand has arisen for text-books which should have more or less refer-